

**APPENDIX B**  
**MARKED-UP VERSION OF SUBSTITUTE SEQUENCE LISTING**  
**WITH MARKINGS TO SHOW CHANGES MADE**  
**(Application Serial No. 10/028,075)**

SEQUENCE LISTING

<110> Khan, Nisar A.  
Benner, Robert

<120> Gene regulator

<130> 2183-5223US

<140> 10/028,075  
<141> 2001-12-21

<150> EP 01203748.7

<151> 2001-10-04

<160> 175

<170> PatentIn Ver. 2.1

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Ala Gln Gly Val  
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<210> 3

<211> 6

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<220>

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Val Leu Pro Ala Leu Pro  
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<211> 5  
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Gly Cys Pro Arg Gly Val Asn Pro Val Val Ser Tyr Ala Val Ala Leu  
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Ser Cys Gln Cys Ala Leu  
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Tyr Cys Pro Thr  
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Pro Ser

<210> 39  
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signalling molecule

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Cys

<210> 45  
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signalling molecule

<400> 45

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1					5					10				15	

Gly Cys Pro Val Cys Ile Thr Val Asn Thr Thr Ile Cys Ala Gly Tyr

	20					25							30		
--	----	--	--	--	--	----	--	--	--	--	--	--	----	--	--

Cys Pro Thr

		35													
--	--	----	--	--	--	--	--	--	--	--	--	--	--	--	--

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<213> Artificial Sequence

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signalling molecule

<400> 46

Cys	Ala	Leu	Cys	Arg	Arg	Ser	Thr	Thr	Asp	Cys	Gly	Gly	Pro	Lys	Asp
1					5					10				15	

His Pro Leu Thr Cys

		20													
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<210> 47

<211> 18

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<223> Description of Artificial Sequence: peptide  
signalling molecule

<400> 47

Cys	Arg	Arg	Ser	Thr	Thr	Asp	Cys	Gly	Gly	Pro	Lys	Asp	His	Pro	Leu
1					5					10				15	

Thr Cys

<210> 48

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<212> PRT

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Thr Cys Asp Asp Pro Arg Phe Gln Asp Ser Ser Ser Lys Ala Pro  
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Pro Pro Ser Leu Pro Ser Pro Ser Arg Leu Pro Gly Pro Ser Asp Thr  
20 25 30  
Pro Ile Leu Pro Gln  
35

<210> 49  
<211> 10  
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<220>  
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signalling molecule

<400> 49  
Leu Gln Gly Val Leu Pro Ala Leu Pro Gln  
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<210> 50  
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<210> 51  
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represent the NF-kappaB binding sequence

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Leu Gln Ala Val  
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<210> 53  
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Leu Gln Gly Val Val  
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<210> 54  
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<210> 55  
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Leu Asp Ala Leu Pro  
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Leu Val Leu Gln Thr Val Leu Pro Ala Leu  
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<210> 58  
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<210> 60  
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Leu Pro Glu Leu  
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<210> 64  
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<210> 66  
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<223> Description of Artificial Sequence:  
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Leu Gln Lys Leu Leu Pro Glu Ala Pro  
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<210> 68  
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<210> 69  
<211> 5  
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<220>  
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<210> 70  
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Leu Gln Val Val  
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<210> 71  
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<210> 72  
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Pro Ala Ala Pro  
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<210> 73  
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<400> 73  
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<210> 74  
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<210> 77  
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<223> Description of Artificial Sequence: pdb/1BFB/1BFB

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Pro Ala Leu Pro Glu  
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<210> 78  
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<210> 79  
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<210> 80  
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Leu Pro Gly Leu
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<210> 83
<211> 4
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<210> 84
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Met Leu Pro Ala Val Pro  
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Val Pro Ala Leu Pro  
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pdb/1PRX/1PRX-A

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<210> 95  
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Leu Pro Ala Leu Pro  
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<223> The 'Xaa' at position\_2 indicates an unknown amino acid

<400> 97  
Met Xaa Arg Val Leu Gln Gly Val Leu Pro Ala Leu Pro Gln Val Val  
1 5 10 15

Cys

<210> 98  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: AI188872

<220>  
<221> MISC\_FEATURE  
<222> (2)  
<223> The 'Xaa' at position 2 indicates an unknown amino acid

<400> 98  
Met Xaa Arg Val  
1

<210> 99  
<211> 17  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: AI126906

<400> 99

Ile Thr Arg Val Met Gln Gly Val Ile Pro Ala Leu Pro Gln Val Val  
1 5 10 15

Cys

<210> 100  
<211> 16  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: AI221581

<400> 100  
Met Thr Arg Val Leu Gln Val Val Leu Leu Ala Leu Pro Gln Leu Val  
1 5 10 15

<210> 101  
<211> 14  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Mm.42246.3  
<400> 101

Lys Val Ile Gln Gly Ser Leu Asp Ser Leu Pro Gln Ala Val  
1 5 10

<210> 102  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Mm.42246.3

<400> 102  
Leu Asp Ser Leu  
1

<210> 103  
<211> 11  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Mm.22430.1

<400> 103  
Val Leu Gln Ala Ile Leu Pro Ser Ala Pro Gln  
1 5 10

<210> 104  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Mm.22430.1

<400> 104  
Leu Gln Ala Ile Leu  
1 5

<210> 105  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Mm.22430.1

<400> 105  
Pro Ser Ala Pro  
1

<210> 106  
<211> 14  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Hs.63758.4

<400> 106  
Lys Val Leu Gln Gly Arg Leu Pro Ala Val Ala Gln Ala Val  
1 5 10

<210> 107  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Hs.63758.4

<400> 107  
Leu Pro Ala Val  
1

<210> 108  
<211> 14

<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Mm.129320.2

<400> 108  
Leu Val Gln Lys Val Val Pro Met Leu Pro Arg Leu Leu Cys  
1 5 10

<210> 109  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Mm.129320.2

<400> 109  
Leu Pro Arg Leu  
1

<210> 110  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Mm.129320.2

<400> 110  
Pro Met Leu Pro  
1

<210> 111  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Mm.22430.1

<400> 111  
Pro Ser Ala Pro Gln  
1 5

<210> 112  
<211> 11  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: P20155

<400> 112  
Leu Pro Gly Cys Pro Arg His Phe Asn Pro Val  
1 5 10

<210> 113  
<211> 11  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Rn.2337.1

<400> 113  
Leu Val Gly Cys Pro Arg Asp Tyr Asp Pro Val  
1 5 10

<210> 114  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Rn.2337.1

<400> 114  
Leu Val Gly Cys  
1

<210> 115  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Hs.297775.1

<400> 115  
Pro Gly Cys Pro Arg Gly  
1 5

<210> 116  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Mm.1359.1

<400> 116

Leu Pro Gly Cys Pro  
1 5

<210> 117  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
sptrembl/Q56177/Q56177

<400> 117  
Val Leu Pro Ala Ala Pro  
1 5

<210> 118  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
sptrembl/Q9W234/Q9W234

<400> 118  
Leu Ala Gly Thr Ile Pro Ala Thr Pro  
1 5

<210> 119  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
sptrembl/Q9W234/Q9W234

<400> 119  
Pro Ala Thr Pro  
1

<210> 120  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
sptrembl/Q9IYZ3/Q9IYZ3

<400> 120  
Gly Leu Leu Pro Cys Leu Pro  
1 5

<210> 121  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
sptrembl/Q9PVW5/Q9PVW5

<400> 121  
Pro Gly Ala Pro  
1

<210> 122  
<211> 10  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
sptrembl/Q9PVW5/Q9PVW5

<400> 122  
Leu Pro Gln Arg Pro Arg Gly Pro Asn Pro  
1 5 10

<210> 123  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
sptrembl/Q9PVW5/Q9PVW5

<400> 123  
Pro Arg Gly Pro  
1

<210> 124  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Hs.303116.2

<400> 124  
Gly Cys Pro Arg  
1

<210> 125  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
pdb/1DU3/1DU3-A

<400> 125  
Gly Cys Pro Arg Gly Met  
1 5

<210> 126  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: pdb/1BIO/1BIO

<400> 126  
Leu Gln His Val  
1

<210> 127  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
pdb/1FL7/1FL7-B

<400> 127  
Val Pro Gly Cys  
1

<210> 128  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
pdb/1HR6/1HR6-A

<400> 128  
Cys Pro Arg Gly  
1

<210> 129  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:pdb/1H6/1HR6-A

<400> 129  
Leu Lys Gly Cys  
1

<210> 130  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: pdb/1BFA/1BFA

<400> 130  
Pro Pro Gly Pro  
1

<210> 131  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: pdb/1BFA/1BFA

<400> 131  
Leu Pro Gly Cys Pro Arg Glu Val  
1 5

<210> 132  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: pdb/1BFA/1BFA

<400> 132  
Cys Pro Arg Glu  
1

<210> 133  
<211> 17  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
swissnew/P01229/LSHB HUMAN

<400> 133  
Met Met Arg Val Leu Gln Ala Val Leu Pro Pro Leu Pro Gln Val Val  
1 5 10 15

Cys

<210> 134  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
swissnew/P01229/LSHB HUMAN

<400> 134  
Met Met Arg Val  
1

<210> 135  
<211> 6  
<212> PRT  
<213> Artificial Sequence  
<220>  
<223> Description of Artificial Sequence:  
swissnew/P01229/LSHB HUMAN

<400> 135  
Val Leu Pro Pro Leu Pro  
1 5

<210> 136  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
swissnew/P01229/LSHB HUMAN

<400> 136  
Val Leu Pro Pro Leu Pro Gln

1

5

<210> 137  
<211> 7  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> Description of Artificial Sequence:  
swissnew/P01229/LSHB HUMAN

<400> 137  
Ala Val Leu Pro Pro Leu Pro  
1 5

<210> 138  
<211> 8  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> Description of Artificial Sequence:  
swissnew/P01229/LSHB HUMAN

<400> 138  
Ala Val Leu Pro Pro Leu Pro Gln  
1 5

<210> 139  
<211> 17  
<212> PRT  
<213> Artificial Sequence  
<220>  
<223> Description of Artificial Sequence:  
swissnew/P07434/CGHB PAPAN

<400> 139  
Met Met Arg Val Leu Gln Ala Val Leu Pro Pro Val Pro Gln Val Val  
1 5 10 15

Cys

<210> 140  
<211> 4  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> Description of Artificial Sequence:  
swissnew/P07434/CGHB PAPAN

<400> 140  
Leu Gln Ala Gly  
1

<210> 141  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
swissnew/P07434/CGHB PAPAN

<400> 141  
Val Leu Pro Pro Val Pro  
1 5

<210> 142  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
swissnew/P07434/CGHB PAPAN

<400> 142  
Val Leu Pro Pro Val Pro Gln  
1 5

<210> 143  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
swissnew/P07434/CGHB PAPAN

<400> 143  
Ala Val Leu Pro Pro Val Pro  
1 5

<210> 144  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:

swissnew/P07434/CGHB PAPAN

<400> 144  
Ala Val Leu Pro Pro Val Pro Gln  
1 5

<210> 145  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
swissnew/Q28376/TSHB HORSE

<400> 145  
Met Thr Arg Asp  
1

<210> 146  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
swissnew/Q28376/TSHB HORSE

<400> 146  
Gln Asp Val Cys  
1

<210> 147  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
swissnew/Q28376/TSHB HORSE

<400> 147  
Ile Pro Gly Cys  
1

<210> 148  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
      sptrembl/Q9Z284/Q9Z284

<400> 148  
Pro Ala Leu Pro Ser  
      1                  5

<210> 149  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
      sptrembl/Q9UCG8/Q9UCG8

<400> 149  
Leu Pro Gly Gly Pro Arg  
      1                  5

<210> 150  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
      sptrembl/Q9UCG8/Q9UCG8

<400> 150  
Leu Pro Gly Gly  
      1

<210> 151  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
      sptrembl/Q9UCG8/Q9UCG8

<400> 151  
Gly Gly Pro Arg  
      1

<210> 152  
<211> 4  
<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: XP\_028754

<400> 152  
Leu Gln Arg Gly  
1

<210> 153  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: XP\_028754

<400> 153  
Leu Gln Arg Gly Val  
1 5

<210> 154  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: XP\_028754

<400> 154  
Leu Gly Gln Leu  
1

<210> 155  
<211> 13  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SignalP (CBS)

<400> 155  
Met Thr Arg Val Leu Gln Gly Val Leu Pro Ala Leu Pro  
1 5 10

<210> 156  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HLA molecule

type I (A\_0201)

<400> 156  
Val Leu Gln Gly Val Leu Pro Ala Leu  
1 5

<210> 157  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: HLA molecule  
type I (A\_0201)

<400> 157  
Gly Val Leu Pro Ala Leu Pro Gln Val  
1 5

<210> 158  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: HLA molecule  
type I (A\_0201)

<400> 158  
Val Leu Pro Ala Leu Pro Gln Val Val  
1 5

<210> 159  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: HLA molecule  
type I (A\_0201)

<400> 159  
Arg Leu Pro Gly Cys Pro Arg Gly Val  
1 5

<210> 160  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: HLA molecule  
type I (A\_0201)

<400> 160  
Thr Met Thr Arg Val Leu Gln Gly Val  
1 5

<210> 161  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: MHC II (H2-Ak  
15-mers)

<400> 161  
Cys Pro Thr Met Thr Arg Val Leu Gln Gly Val Leu Pro Ala Leu  
1 5 10 15

<210> 162  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: MHC II (H2-Ak  
15-mers)

<400> 162  
Pro Gly Cys Pro Arg Gly Val Asn Pro Val Val Ser Tyr Ala Val  
1 5 10 15

<210> 163  
<211> 15  
<212> PRT  
<213> Artificial Sequence  
<220>  
<223> Description of Artificial Sequence: HLA-DRB1\*0101  
15-mers

<400> 163  
Pro Arg Gly Val Asn Pro Val Val Ser Tyr Ala Val Ala Leu Ser  
1 5 10 15

<210> 164  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: HLA-DRB1\*0101  
15-mers

<400> 164  
Thr Arg Val Leu Gln Gly Val Leu Pro Ala Leu Pro Gln Val Val  
1 5 10 15

<210> 165  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: HLA-DRB1\*0101  
15-mers

<400> 165  
Leu Gln Gly Val Leu Pro Ala Leu Pro Gln Val Val Cys Asn Tyr  
1 5 10 15

<210> 166  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: HLA-DRB1\*0301  
(DR17) 15-mers

<400> 166  
Met Thr Arg Val Leu Gln Gly Val Leu Pro Ala Leu Pro Gln Val  
1 5 10 15

<210> 167  
<211> 15  
<212> PRT  
<213> Artificial Sequence  
<220>  
<223> Description of Artificial Sequence: HLA-DRB1\*0301  
(DR17) 15-mers

<400> 167  
Ser Ile Arg Leu Pro Gly Cys Pro Arg Gly Val Asn Pro Val Val  
1 5 10 15

<210> 168  
<211> 7  
<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: NMPF-56 peptide

<400> 168  
Val Ala Pro Ala Leu Pro Gln  
1 5

<210> 169  
<211> 35  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: NMPF-62 peptide

<400> 169  
Val Val Cys Asn Tyr Arg Asp Val Arg Phe Glu Ser Ile Arg Leu Pro  
1 5 10 15

Gly Cys Pro Arg Gly Val Asn Pro Val Val Ser Tyr Ala Val Ala Leu  
20 25 30

Ser Cys Gln  
35

<210> 170  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: NMPF-67 peptide

<400> 170  
Cys Pro Arg Gly Val Asn Pro  
1 5

<210> 171  
<211> 14  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: NMPF-70 peptide

<400> 171

Met Thr Arg Val Leu Gln Gly Val Leu Pro Ala Leu Pro Gln  
1 5 10

<210> 172  
<211> 18  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: NMPF-75  
peptide

<400> 172  
Ser Lys Ala Pro Pro Pro Ser Leu Pro Ser Pro Ser Arg Leu Pro Gly  
1 5 10 15

Pro Cys

<210> 173  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: NMPF-56  
peptide

<400> 173  
Val Ala Pro Ala Leu Pro Gln  
1 \_\_\_\_\_ 5

<210> 174  
<211> 17  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: NMPF-71  
peptide

<400> 174  
Met Thr Arg Val Leu Pro Gly Val Leu Pro Ala Leu Pro Gln Val Val  
1 \_\_\_\_\_ 5 \_\_\_\_\_ 10 \_\_\_\_\_ 15

Cys [ \_\_\_\_\_ ]

<210> 175  
<211> 9

>  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> Description of Artificial Sequence: NMPPF peptide  
  
<400> 175  
Cys Arg Gly Val Asn Pro Val Val Ser  
1 5

C<sub>1</sub>  
concent